

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

C¹ 1. (currently amended) A semiconductor body containing at least one semiconductor structure, ~~and said semiconductor body~~ comprising:

~~the semiconductor body defining an isolation trench formed in said semiconductor body and having a bottom and sidewalls,~~ ~~and having an upper portion and a lower portion,~~ said isolation trench enclosing an area of the semiconductor body which contains asaid semiconductor structure ~~which so that the semiconductor structure is to be~~ electrically isolated from other semiconductor structures that are also contained within the semiconductor body but which are not located within the enclosed area;

a the lower portion of the isolation trench being at least partly filled with an electrically conductive material, ~~that has sidewall portions which are of said electrically conductive material being at least partly separated from the sidewalls of the lower portion of the isolation trench by a first electrical insulator, a lower region of said electrically conductive material having a lower portion that is being in electrical contact with the semiconductor body at the bottom of said isolation trench; and~~

a remaining the upper portion of the isolation trench being filled with a second electrical insulator.

2. (currently amended) The semiconductor body of claim 1 wherein the electrically conductive material includes ~~is~~ doped polysilicon ~~and the first and second electrical insulators are both silicon dioxide.~~

3. (cancelled) /

4. (cancelled) /

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cont
5. (cancelled)
 6. (cancelled)
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 15. (cancelled)
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 17. (cancelled)
 18. (cancelled)
 19. (cancelled)
 20. (cancelled)

21. (new) The semiconductor body of claim 1 wherein said first electrical insulator includes silicon dioxide.

22. (new) The semiconductor body of claim 1 wherein said second electrical insulator includes silicon dioxide.

23. (new) The semiconductor body of claim 1 wherein a region of said semiconductor body that is adjacent to said bottom of said trench is more heavily doped than a remaining portion of said semiconductor body.

24. (new) The semiconductor body of claim 1 wherein a region of said semiconductor body that is adjacent to said bottom of said trench is of a same conductivity type as said electrically conductive material.

25. (new) The semiconductor body of claim 1 wherein the at least one semiconductor structure includes a

conductive buried strap region, and said bottom of said isolation trench is at least as deep as a bottom of said conductive buried strap region.

26. (new) The semiconductor body of claim 1 wherein said first electrical insulator includes undoped polysilicon.

27. (new) An isolation structure formed in a semiconductor body for electrically isolating at least one semiconductor structure from another semiconductor structure; said isolation structure comprising:

an isolation trench formed in the semiconductor body and enclosing an area of said semiconductor body that includes said semiconductor structure, said isolation trench having sidewalls and a bottom;

an electrically conductive material at least partly filling a lower portion of said isolation trench and in electrical contact with the semiconductor body at said bottom of said isolation trench;

a first electrically insulating layer formed on said sidewalls of said isolation trench to at least partly separate said electrically conductive material from said sidewalls of said isolation trench; and

a second electrically insulating layer filling a remaining portion of said isolation trench.

28. (new) The isolation structure of claim 27 wherein said electrically conductive layer includes doped polysilicon.

29. (new) The isolation structure of claim 27 wherein said first electrically isolating layer includes silicon dioxide.

30. (new) The isolation structure of claim 27 wherein said first electrically isolating layer includes undoped polysilicon.

31. (new) The isolation structure of claim 27 wherein said bottom of said isolation trench contacts a region of the semiconductor body that is more heavily doped than a remaining portion of the semiconductor body.

32. (new) The isolation structure of claim 27 wherein said electrically conductive material is of a same conductivity type as a region of the semiconductor body that adjoins said bottom of said isolation trench.

33. (new) The isolation structure of claim 27 wherein said bottom of said isolation trench is at least as deep as a bottom of a conductive buried strap which comprises part of the semiconductor structure.
